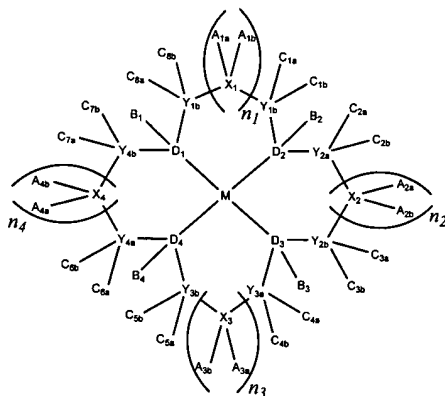


WHAT IS CLAIMED IS

- 1 1. A method of making a polymer which comprises:
- 2 copolymerizing a polyazamacrocyclic transition metal complex possessing at
- 3 least one polymerizable group, monomer and optional crosslinking agent,
- 4 wherein said polymer undergoes a detectable color change upon exposure to a
- 5 biogenic amine.
- 1 2. The method of Claim 1 wherein the polyazamacrocyclic transition
- 2 metal complex corresponds to the general formula:



- 3 wherein M is a transition metal ion;
- 4 n_1, n_2, n_3, n_4 can be the same or different and can be 0 or 1;
- 5 $D_1, D_2, D_3,$ and D_4 can be the same or different and can be C, N, O, S, or P;
- 6 $B_{1a}, B_{1b}, B_{2a}, B_{2b}, B_{3a}, B_{3b}, B_{4a},$ and B_{4b} can be the same or different and can be H, F,
- 7 CH_3 , alcohol, allyl, amine, styrene, methacrylate, acrylate, vinyl, vinyl ether, vinyl acetate,
- 8 trialkoxysilane, dialkoxychlorosilane and epoxy;
- 9 $X_1, X_2, X_3,$ and X_4 can be the same or different and can be N, C, H, or B;
- 10 $A_{1a}, A_{1b}, A_{2a}, A_{2b}, A_{3a}, A_{3b}, A_{4a},$ and A_{4b} can be the same or different and can be H, F,
- 11 $NH_3, NO_2, CO_2^-, CO_2H, CO_2R,$ alcohol, allyl, styrene, methacrylate, acrylate, vinyl, vinyl
- 12 ether, vinyl acetate, trialkoxysilane, dialkoxychlorosilane and epoxy;

13 Y_{1a} , Y_{1b} , Y_{2a} , Y_{2b} , Y_{3a} , Y_{3b} , Y_{4a} , and Y_{4b} may be the same or different, and can be C or
14 O; and,

15 C_{1a} , C_{1b} , C_{2a} , C_{2b} , C_{3a} , C_{3b} , C_{4a} , C_{4b} , C_{5a} , C_{5b} , C_{6a} , C_{6b} , C_{7a} , C_{7b} , C_{8a} , and C_{8b} can be the
16 same or different and can be H, F, NH_3 , NO_2 , CO_2^- , CO_2H , CO_2R , alcohol, allyl, styrene,
17 methacrylate, acrylate, vinyl, vinyl ether, vinyl acetate, trialkoxysilane, dialkoxychlorosilane
18 and epoxy.

1 3. The method of Claim 2 wherein M is nickel(II), D_1 , D_2 , D_3 , and D_4 are
2 N, Y_{1a} , Y_{1b} , Y_{2a} , Y_{2b} , Y_{3a} , Y_{3b} , Y_{4a} , and Y_{4b} are C, n_1 and n_3 are 1, n_2 and n_4 are 0, X_1 and X_3
3 are N, A_{1a} and A_{3a} are styrene, vinyl, amine or carboxyl, and A_{1a} and A_{3a} are electron lone
4 pairs.

1 4. The method of Claim 1 wherein the biogenic diamine is selected from
2 the group consisting of cadaverine, putrescine and histamine.

1 5. A method of making a molecularly imprinted polymer which
2 comprises:

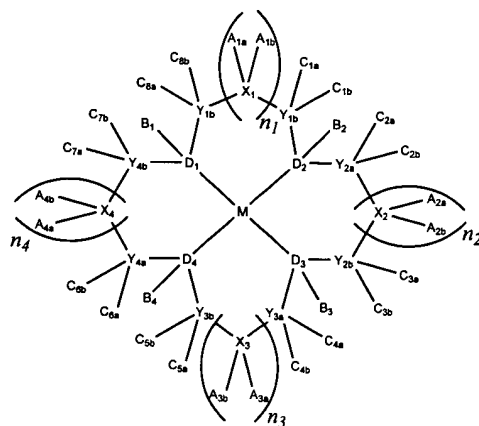
3 (A) providing the reaction product of (i) a four-coordinate
4 polyzamacrocyclic transition metal complex containing two or more polymerizable
5 moieties and (ii) a target molecule comprising biogenic amine, said reaction product
6 possessing a six-coordinate geometry;

7 (B) copolymerizing the reaction product of step (A) with monomer and
8 crosslinking agent to form a polymer; and

9 (C) removing the target molecule from the polymer to provide a molecularly
10 imprinted polymer which selectively binds to the target molecule and undergoes a detectable
11 color change when the target molecule binds thereto.

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- 2 6. The method of Claim 5 wherein the polyazamacrocyclic transition metal
3 complex corresponds to the general formula:



4 wherein M is a transition metal ion;

5 n_1, n_2, n_3, n_4 can be the same or different and can be 0 or 1;

6 $D_1, D_2, D_3,$ and D_4 can be the same or different and can be C, N, O, S, or P;

7 $B_{1a}, B_{1b}, B_{2a}, B_{2b}, B_{3a}, B_{3b}, B_{4a},$ and B_{4b} can be the same or different and can be H, F,
8 CH_3 , alcohol, allyl, amine, styrene, methacrylate, acrylate, vinyl, vinyl ether, vinyl acetate,
9 trialkoxysilane, dialkoxychlorosilane and epoxy;

10 $X_1, X_2, X_3,$ and X_4 can be the same or different and can be N, C, H, or B;

11 $A_{1a}, A_{1b}, A_{2a}, A_{2b}, A_{3a}, A_{3b}, A_{4a},$ and A_{4b} can be the same or different and can be H, F,
12 $\text{NH}_3, \text{NO}_2, \text{CO}_2^-, \text{CO}_2\text{H}, \text{CO}_2\text{R},$ alcohol, allyl, styrene, methacrylate, acrylate, vinyl, vinyl
13 ether, vinyl acetate, trialkoxysilane, dialkoxychlorosilane and epoxy;

14 $Y_{1a}, Y_{1b}, Y_{2a}, Y_{2b}, Y_{3a}, Y_{3b}, Y_{4a},$ and Y_{4b} may be the same or different, and can be C or
15 O; and,

16 $C_{1a}, C_{1b}, C_{2a}, C_{2b}, C_{3a}, C_{3b}, C_{4a}, C_{4b}, C_{5a}, C_{5b}, C_{6a}, C_{6b}, C_{7a}, C_{7b}, C_{8a},$ and C_{8b} can be the
17 same or different and can be H, F, $\text{NH}_3, \text{NO}_2, \text{CO}_2^-, \text{CO}_2\text{H}, \text{CO}_2\text{R},$ alcohol, allyl, styrene,
18 methacrylate, acrylate, vinyl, vinyl ether, vinyl acetate, trialkoxysilane, dialkoxychlorosilane
19 and epoxy.

1 7. The method of Claim 6 wherein M is nickel(II), D₁, D₂, D₃, and D₄ are
2 N, Y_{1a}, Y_{1b}, Y_{2a}, Y_{2b}, Y_{3a}, Y_{3b}, Y_{4a}, and Y_{4b} are C, n_1 and n_3 are 1, n_2 and n_4 are 0, X₁ and X₃
3 are N, A_{1a} and A_{3a} are styrene, vinyl, amine or carboxyl, and A_{1a} and A_{3a} are electron lone
4 pairs.

1 8. The method of Claim 5 wherein the biogenic diamine is selected from
2 the group consisting of cadaverine, putrescine and histamine.